Being a poor farmer in a wealthy country: A Swiss case study

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Abstract

Many Swiss farming families face socioeconomic disadvantage despite Switzerland being a wealthy country with instruments of agricultural policy financially supporting almost all farmers. However, official poverty statistics exclude Swiss farmers and scientific knowledge is rare about how such situations are experienced. This article scrutinises the situation of Swiss farming families living in poverty or material deprivation by intertwining qualitative and quantitative methods to enrich both types of data and interpretations. By statistically comparing farmers with the self-employed in other economic sectors, it uses a novel way of comparing the farming with the non-farming population. The article shows that the poverty among farmers resembles that of the self-employed with no or few employees in other economic sectors and describes the lived experiences of poverty and material deprivation. It concludes that adaptive preferences make farming families resilient to socioeconomic disadvantage, while possibly leading to a loss of their livelihood in the long run.

Introduction

Poverty among farming families in Western European countries is not a new issue. They have had to struggle for new income sources or adapt their production systems for many centuries, a fact which leads Meert *et al*. (2005) to describe it as a chronic problem. Processes of globalisation and trade liberalisation further impact the lives of farming families. Even in a wealthy country like today's Switzerland, characterised by one of the highest GDP per capita worldwide (Worldbank 2018) and median household income (OECD 2018a), and despite instruments of agricultural policy supporting almost all farmers in financial terms, poverty in faming families exists.

As shown by Fluder et al. (2009), social science evidence regarding agricultural poverty in advanced economies is scarce, in contrast to developing and transition

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countries. Studies on poverty and social exclusion in advanced economies primarily cover the urban space. Moreover, through discourses of the idealisation and romanticism of the rural, the existence of rural poverty is often denied, as in the UK (Cloke 1995, quoted in Tickamyer 2006), regardless of research on rural poverty showing the contrary. However, studies on rural poverty have rarely considered (specifically) farming families (for example, Tovey 2001; Wiesinger 2005; Shucksmith 2012; Shucksmith and Schafft 2012). Nevertheless, rural poverty and poverty in farming families are no less frequent than urban poverty (see Cox 1998; Wiesinger 2005). Furthermore, it is assumed that in rural areas factors of poverty cumulate, and therefore, the poverty spiral spins around faster and harder. In this context, Inhetveen and Schmitt (2010) talk of a multiple precarity in agriculture. Finally, tight rural social structures bear the risk of stigmatisation (Höpflinger and Wyss 1994; Hümbelin 2016). This leads to a higher extent of 'hidden poverty' in rural areas, meaning that people who are poor and would be eligible for social assistance do not claim it and thus remain 'hidden' (Fluder and Stremlow 1999; Riphahn 2001), a phenomenon known as the non-take-up of social benefits (Eurofound 2015). As highlighted during the ESRS Congress 2012, among European rural sociologists it is acknowledged that the outlined research gaps need to be closed to better understand the increasing social and economic inequalities in rural Europe (see Shucksmith 2012).

Also in Switzerland, studies on poverty in farming families[1] are rare (see section three) and the estimates of their share among the poor vary considerably. Due to difficulties in measuring poverty among farming families, from 2004 onwards this population group was excluded from official statistical publications on income poverty in Switzerland (SFSO 2007). Three years later, the Swiss Farmers' Union resumed the discussion and stated in their yearly report on Swiss agriculture that in 2004 20 per cent and in 2005 27 per cent of Swiss farming households were working poor (SBV 2007). This share was significantly higher than that of the total Swiss population (4.5 per cent and 4.2 per cent, respectively, SFSO 2007). The Swiss Farmers' Union admitted, however, that these figures had to be treated with caution. Nevertheless, for some weeks, the figures and statements of the Swiss Farmers' Union on working poverty among farming households fired political and media discussions about the existence of this phenomenon and about how poverty among farmers should be measured. However, the public discussion soon waned and talking about poverty among Swiss farming families was again taboo in the political discourse as well as in the narratives of members of farming families living in poverty or in precarious situations (Contzen 2015).

Hence, the lack of clarity about the extent of poverty among Swiss farming families remains to be solved. This article aims to clarify it by presenting novel data on the extent of financial poverty and material deprivation among Swiss farming families. Furthermore, it seeks to go beyond pure statistical data by uncovering how such situations are experienced by those affected and by unravelling how objective poverty attributions and subjective perceptions might diverge (i.e., the phenomenon of adaptive preferences).

Beyond closing this specific knowledge gap, our article contributes to a more general discussion on poverty and material deprivation in the rural areas of advanced economies, by analysing poverty among farmers compared to other own-account

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workers or the self-employed and by combining quantitative and qualitative methods in an intertwined rather than sequential manner to unravel lived situations of poverty and adaptive preferences.

The article begins with theoretical and conceptual reflections, followed by a presentation of research on poverty in Swiss agriculture. The Swiss case is then introduced, followed by a description of the methods and data used. The results section provides a comparison of the extent of poverty among farmers and similar groups of workers (in terms of occupational status and educational level) paired with a fine-grained understanding of what it means to be poor in the agricultural sector and of how struggling farmers and their families perceive their situation and adjust to it. Finally, we discuss our findings within a broader context drawing conclusions on the added value of methodological approaches.

Theorising and conceptualising poverty and material deprivation

What does it mean to be poor in a rich country in the twenty-first century? Researchers who analyse the poverty situation in post-industrial economies define a 'sociocultural' subsistence level which encompasses more than basic goods (Crettaz 2011): an individual is poor compared to the average living standard of the society in which he or she lives. This is a *relative* definition of poverty, linked to the fact that human needs are socially constructed and society imposes expectations as to what is necessary to live a decent life (Townsend 1974). Townsend (1979, p. 915) called relative deprivation 'the absence or inadequacy of those diets, amenities, standards, services and activities which are common or customary in society'. Bourdieu (1993) stated that industrialised societies have been very good at reducing extreme poverty, but through a process of differentiation, they have multiplied social spaces, which has favoured the development of a 'relative misery' (own translation).

We aim to understand the meaning of poverty for the rural population in a context where economic changes and the setting of living standards happen in urban environments. One of the difficulties is that the cost of certain goods and services may be much lower in rural areas than in cities and towns (housing costs, for example), but others could be higher (such as commuting costs), which is challenging for studies based on indicators derived from the national median income, without accounting for regional price variations (Slack 2010; Crettaz 2013), as discussed further below.

How is poverty measured today? The specialist literature can be broken down into two main categories: The first relies on *absolute measurements*, usually on the cost of a basket of goods and services kept constant in real terms across years and countries. Alternatively, this fixed set of goods and services itself can be used, with households lacking a certain number of items because they cannot afford them deemed to be materially deprived, and the same set used for all countries and all years under study. For instance, Eurostat, the EU's statistical office, measures material deprivation in this way (Atkinson and Marlier 2010).

The second approach is based on a *relative measure*, the poverty line being a share of equivalised median disposable income, usually 60 per cent, as is the case in most European official statistics and scholarly publications (Lohmann and Crettaz 2018).

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Indicators of material deprivation can be designed to be relative using weighting factors based on the percentage of the population who own each item, or who consider that an item is necessary to lead a decent life, or both (Halleröd 1995; Gazareth and Suter 2010; Nolan and Whelan 2010), for each country and year.

However, conventional poverty research largely neglects financial resources beyond income (Kuypers and Marx 2018). Studies taking wealth into account show for example that life chances depend more on wealth than on income (OECD 2018b) or that wealth is as important to subjective wellbeing as income (Headey and Wooden 2004). Although the importance of including wealth in poverty measures is acknowledged, the quality of existing data and the best way to include assets in poverty measures are still debated.

As we seek to understand poverty among farmers, representing a subgroup of the self-employed, it should be emphasised that their wealth is the very foundation of their economic activity. Hence, they cannot sell their assets to overcome a liquidity shortage. Moreover, at least for Switzerland, most farming households are indebted, many heavily (Agriexpert 2016), and if their assets are compared to their liabilities (i.e. their net worth is examined), the situation looks even grimmer. To deal with this issue, we not only use monetary indicators but also indicators based on material living standards (see below). Thus, if a household has, thanks to its assets, better living conditions than suggested by its income, this will be measured by these non-monetary indicators.

Finally, it is noteworthy that poverty research focuses on *individuals* who live in a poor and/or materially deprived household (Andress and Lohmann 2008; Crettaz 2011; Fraser *et al*. 2011; Lohmann and Crettaz 2018).

What are the consequences of prolonged periods of low income and/or of material deprivation, in terms of subjective adjustment to the situation? Poverty research has brought several explanations of the psychosocial impact of long-term poverty, such as *risk-aversion and present bias* (Haushofer and Fehr 2014, Carvalho et al. 2016) or the analysis of *adaptive preferences*. The latter is particularly convincing (Crettaz and Suter 2013). In Bourdieu's (1979) analysis of the situation of the French working class, his interviewees reported that they had chosen their lifestyle, although it was largely imposed by limited economic, cultural and social resources: they made a virtue of necessity. Elster (1982) mentioned that adaptive preference takes the form of downgrading the inaccessible options, as people adjust their preferences to their situation, the so-called 'sour grapes' effect (Teschl and Comim 2005; Halleröd 2006). Indeed, '[p]eople's psychological adjustment strategies to objective conditions appear to be remarkably flexible' (Diener and Suh 1997, p. 202).

Research on poverty and material deprivation in Swiss agriculture

As previously stated, studies on poverty in Swiss farming families are rare and the estimates have varied substantially. The first, nationwide study on poverty indicated a 15 per cent poverty rate among farming families (Leu *et al*. 1997). A later study on poverty among the active workforce suggested, based on OECD data that 34 per cent of farming families were working poor, compared to 20 per cent among other self-employed (Schweizerischer Arbeitgeberverband 2002).[2] Finally, the first

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nationwide study on working poverty in Switzerland showed a high working-poor rate in rural areas, and among farming families in particular (34 per cent among the latter compared to 14 per cent among self-employed workers in general in rural areas) (Streuli und Bauer 2002). However, the numbers of farming families found in these surveys tended to be low because they represent a small share of the workforce. Moreover, the approaches to measuring poverty among farming families were highly contested and official statistics no longer present poverty rates in the agriculture sector. Nevertheless, researchers continued to investigate poverty among Swiss farmers. Mann (2005) analysed the official Central Farm Accountancy Data Network showing that 20 per cent of the households in this sample have an income below 50 per cent of the median and thus are poor and assumed that this share must be higher as the lowest income per centile is underrepresented in the sample. While this study focused on poverty using this term, the yearly reports of the Federal Office of Agriculture (FOAG) have never used the term 'poverty', instead presenting data on the financial stability of farms. This data shows that over years, between 30 and 40 per cent of farms are in a difficult financial situation due to a negative formation of equity capital, in half of the cases paired with high indebtedness. Moreover, the lowest income quartile cannot cover the expenditures of household consumption and hence live on the substance of the farm (FOAG 2015).

Some studies have investigated the social security situation of farmers (Vonarb und Roth 1994) and their knowledge of social services (Wicki und Pfister-Sieber 2000), showing that farming households lack knowledge of social security issues and social services and strongly rely on informal security by counting on their familial network. Moreover, they showed that aspects of farming identity, such as autonomy prevent farming households from claiming social benefits. Another study confirmed this finding, revealing that only when the situation is very severe do farming households contact social services (Fluder et al. 2009; Contzen 2015).

The only study tackling the coping strategies of farming families is that of Fluder et al. (2009), which shows that poor farming families rely on various strategies from using their private network to get loans, through working off-agriculture, to simply cutting private expenditure. Moreover, gender differences are revealed, especially regarding perception of poverty, showing that farming women perceive financial difficulties earlier than their husbands or at least start talking about them earlier and developing coping strategies (Contzen 2013).[3]

Introduction to the Swiss case, methods and data

Swiss agriculture

This article is based on a case study of Swiss farming families living in situations of poverty or material deprivation which was carried out between 2013 and 2015. As is typical in agriculture worldwide, Swiss agriculture largely consists of family farms, meaning that 79 per cent of the workforce are the farm operator and members of his or her family, in most cases the spouse. The share of family workers has remained stable over the years, but their absolute number declined from 180,894

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in 1996 to 121,185 in 2017 (FOAG 2016, 2017). In 2017, the number of all farms was 51,600. While their number had decreased by 36 per cent since 1996, their size had almost doubled in the same period, today being at 20 hectares per farm (SFSO 2017, 2018). Still, compared to other European countries' agricultural sector, Swiss farm structures are small, which leads to productivity deficits (Swiss Federal Council 2017). These structures are a result of the country's topographic, climatic and economic conditions, as well as protectionist policies in force until the end of the 1990s, which partly protected Swiss agriculture from the restructuring occurring in other European countries (e.g., Chappuis *et al*. 2008). Despite the political aim of facilitating structural change, agricultural instruments, such as direct payments, especially in the past form of area payments, slowed restructuration (e.g., Breustedt 2003; Baur 2005). About three-quarters of farms are active in livestock production, hence agricultural land is dominated by pasture and meadows. Roughly one-fifth of farms produce crops, mostly located in the lowlands. The remaining farms are mixed-farm (SFSO 2018). On average, the total income of farms is composed of two-third farm income, including direct payments, and one-third off-farm income (SFSO 2018). Total farm incomes tend to be higher in the lowlands than in the hill and mountain regions (SFSO 2018).

Methods and data

The study used a mixed-methods design, applying qualitative and quantitative methods in parallel instead of sequentially to enrich both types of data and interpretations.

On one hand, it was based on the Survey on Income and Living Conditions (SILC), carried out by the Swiss Federal Statistical Office (SFSO) according to Eurostat's guidelines. Switzerland is one of the non-EU-member states participating in SILC. Hence, the quantitative analyses presented here could be replicated for each EU member state and those non-EU-member states participating in SILC.

Due to the small number of farmers in SILC, six waves from 2007 until 2012 have been combined, resulting in a sample of 1666 individuals working in agriculture, a number large enough to allow for reliable descriptive statistics: for respondents who participated in several years, the most recent information was kept. All amounts of money were adjusted for inflation based on the official consumer price index at 2012 prices. We have used logistic regressions to assess the simultaneous impact of several variables and to 'isolate' the impact of working in the agricultural sector.

To provide meaningful descriptive statistics, we compare individuals active in farming with similar population groups outside the agricultural sector. Given that Swiss agriculture is largely made up of family farms with no or few paid employees, we compare self-employed farmers to the other self-employed workers in Switzerland who are either own-account workers, i.e., self-employed without employees or with four employees at most. We also included salaried workers who are Swiss nationals and do not hold a tertiary-level degree,[4] as well as the overall levels of working poverty.

On the other hand, qualitative fieldwork was carried out in 2014 in the three main linguistic parts of Switzerland (German, French and Italian). Semi-structured

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topic-guide interviews were conducted with members of 35 farming households in difficult income conditions (see below). We defined farming households as those composed of family members of whom at least one adult is active in agriculture as the farm operator, while other adults might work inside or outside agriculture. The farm had to be officially recognised as a farming business.[5] The interview guide covered the following topics: family and farm history, current and past economic and social situation, coping strategies and potential positive changes, prospects and wishes for the family and farm.

Sample selection aimed to follow the method of 'selective sampling' (Schatzmann and Strauss 1973). Possible respondents were identified through gatekeepers such as professionals from rural advisory services or agricultural fiduciaries and through announcements in the agricultural press. To avoid stigmatising possible interviewees, we explicitly did not search for poor farmers but those in *precarious income conditions*, for which we defined financial proxies based on previous research.[6] Gatekeepers having access to the income data of their clients selected possible interviewees based on these proxies and a general estimation of their living situation. Due to difficulties in finding individuals willing to talk about their situation, we eventually had to drop the method of selective sampling and to interview everyone fitting our criteria of precarious income conditions. Nevertheless, we had to exclude three interviewed households from the analysis, as the interview revealed that the families did not fit our sample. The 32 qualitative interviews selected for analysis were carried out with members of farming households composed of married couples with and without children as well as single male and female farmers. The interviews, lasting between 45 minutes and over three hours, were conducted at the interviewees' homes, recorded and fully transcribed in German, French or Italian.[7] The transcripts were analysed using a coding guide imported into the software MaxQDA. The coding guide was mainly deductively constructed based on the interview guide (Mayring 2010) and completed by inductively constructed codes which emerged during the coding process (Strauss and Corbin 1996). To also identify gender differences in couples, the analytical unit was twofold: the couple itself (representing the household) was an analytical unit but also each person individually.

The qualitative sample represents households with diverse structures and stages in the family cycle. It consists of individuals of different ages (from 34 to 66 years old with most of them between 35 and 54) and varies regarding educational levels (from agricultural vocational education and apprenticeship without diploma to the highest professional degree permitting the training of apprentices on their farms, to vocational education and training diplomas of other professions, all at upper-secondary educational level[8]). Additionally, it includes farms of different sizes (from 2.5 to 70 hectares, with an average of 25.4 hectares and thus higher than the Swiss average) with diverse production systems (from dairy to mixed farms to very specialised vegetable or wine producers) located in all production zones (from the lowlands to the mountain areas) of Switzerland. Thus, the sample represents a broad spectrum of Swiss farming households and farms.

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Defining poverty

For the quantitative part of this article, we define poverty as living in a household whose disposable income – including all income sources, i.e., farm income including direct payments, income from off-farm work and social transfers/benefits – is lower than the poverty threshold derived from social assistance eligibility criteria (Swiss Conference of Welfare Institutions 2016). This threshold is similar to that used in official statistics (SFOS 2016). The housing and health care costs parameters, which form a considerable share of households' expenditure, are calculated at the regional level (cantons[9]). Additionally, we used a threshold developed by Fluder et al. (2009) which is derived from Swiss social assistance guidelines but adjusted to the specific living conditions of farming households. Specifically, expenditure on food and drink (including meals eaten out) and transportation and housing costs were revised downwards for farming families.

We also use the EU's official poverty line, set at 60 per cent of median equivalised disposable income, i.e., after-tax and benefits and standardised income (using Eurostat's equivalence scale). A second relative poverty threshold was set at 50 per cent of median income to be used as a robustness check.

To circumvent the well-known issues in measuring the income of self-employed workers in general, and of farmers in particular, as well as the question whether to include wealth in the measurement of poverty, we also used indicators of material deprivation based on a list of goods and services similar to the one used in the EU's official statistics, namely

- facing unexpected expenditure that amount to one-twelfth of the relative poverty line set at 60 per cent of median income; in the case of Switzerland at the time of the interviews, this amounted to CHF 2,500[10]
- a week of holiday away from home
- having payment arrears (rent, utilities, etc.)
- having a meal with meat, poultry, fish or vegetarian equivalent every second day
- keeping the home adequately warm
- having a washing machine
- having a colour TV
- having a phone, including a mobile phone
- having a car

Recent research (Crettaz 2012; Crettaz and Suter 2013) has shown that the question of financial constraints in particular is associated with adaptation processes, i.e. poor households who have lacked an item for many years are more likely to say that it is by choice rather than because of lacking financial resources. This is the reason why we have removed the 'subjective' component of our indicators of material deprivation, that is we only take into account whether or not the household possesses an item/has access to a service, irrespective of the reason for this situation, contrary to what Eurostat does. To tackle the fact that some items might be more important in rural areas (e.g., car), or on the contrary, much less widespread in agriculture (e.g.,

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holiday away from home), we do not use an additive index of material deprivation but analyse each item separately.

Results

Beginning with the EU's official relative poverty line (60 per cent of median income), the difference between *family workers in agriculture*, i.e. the self-employed farm operator and paid or unpaid family workers, and the self-employed in other sectors with similar profiles, is massive, with about one quarter of the former experiencing relative poverty, while the rate for the latter varies between seven and 15 per cent (see Table 1). Even at the lower 50 per cent level, the *family workers in agriculture* are still worse off than other comparable groups of self-employed and Swiss citizens, but the gap is smaller.

When a more stringent poverty indicator adjusted for regional differences is used, namely the Swiss official poverty line, which is derived from welfare benefits guidelines,[11] the difference is far less marked. *Family workers in agriculture* are more affected (8.7 per cent) than self-employed workers with one to four employees (3.3), slightly more than salaried workers who are Swiss citizens (7.1), but less than own-account workers in other economic sectors (10.8).

If the threshold adjusted for farming households (Fluder et al. 2009) is used, the poverty levels are equal among *family workers in agriculture* and Swiss salaried workers in other sectors, still higher than among non-agricultural self-employed with one to four employees but lower than own-account workers in other sectors, the latter being known to be a rather disadvantaged group (Crettaz 2011).

Is the fact that Swiss farmers are more exposed to working poverty (using the non-adjusted threshold) than the average Swiss worker mainly attributable to agriculture *per se,* or is it mainly due to the socioeconomic structure of this group? To answer this question, regression models were carried out, specifically logistic models predicting whether a worker lives in a poor household or not, based on three of the four previously used poverty thresholds: 60 per cent of median income, 50 per cent of median income and the Swiss official poverty line. Table 2 contains the average marginal effects, indicating that a one-unit increase in explanatory factors results in an increase or decrease in the probability of being working poor, expressed in percentage points.

Being self-employed or a family worker in Swiss agriculture, all else being equal (age, education, gender, citizenship, household type and occupational status), increases the probability of having a household income below 60 per cent of the median by 3.7 percentage points (with an overall working poverty rate of 13.8 per cent), and the probability of having an income below 50 per cent by 2.2 percentage points (overall rate: 8.2 per cent). When the official poverty line is used, the effect of this factor disappears. Put differently, working in agriculture *per se* increases the risk of having a low income (Eurostat's indicator), but not of having a *very* low income when local prices are accounted for (Swiss official poverty line).

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Table 1: *Poverty rates among various categories of workers in the agricultural sector (grey) and in the other economic sectors, weighted, in per cent*

	EU's poverty line		Poverty line		
	60% median disposable income	50% median disposable income	derived from Swiss social assistance guidelines	... derived from Swiss social assistance guidelines and adjusted for farming households	Number of cases
Self-employed farmers	26.2	14.7	8.3	6,9	338
Salaried and unpaid family workers in the family farming business	24.2	16.2	9.3	7,6	398
Subtotal 'family workers in agriculture'	*25.4*	*15.3*	*8.7*	*7.1*	*736*
Own-account workers in other sectors	15.1	10.1	10.8		872
Self-employed workers with 1–4 employees in other sectors	7.4	2.9	3.3		230
Salaried workers in other sectors, non-tertiary degree, Swiss citizens	9.4	5.5	7.1		7,659
All workers (own-account workers, self-employed and salaried workers)	13.8	8.2	7.8		11,704

Source: SILC 2007-2012, own calculations

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Table 2: *Increase/decrease in the probability of being working poor according to three different poverty lines*

	Pr(Disposable income < 60% median)		Pr(Disposable income < 50% median)		Pr(Poor according to Swiss welfare guidelines)	
	Average marginal effects	Sig.	Average marginal effects	Sig.	Average marginal effects	Sig.
Works in agriculture	0.037	**	0.022	**	−0.002	n.s.
Woman	0.010	*	0.007	*	0.009	*
Age	−0.007	**	−0.004	**	−0.007	**
Age squared	0.000	**	0.000	**	0.000	**
Education (ref: secondary)						
Primary education	0.053	**	0.030	**	0.023	**
Tertiary	−0.078	**	−0.036	**	−0.040	**
Swiss citizen	−0.094	**	−0.068	**	−0.054	**
Household type (ref: couple with 1-2 child(ren))						
One-person household	0.105	**	0.097	**	0.156	**
Couple without children	0.039	**	0.056	**	0.066	**
Single-parent household	0.180	**	0.140	**	0.148	**
Couple with 3 + children	0.115	**	0.091	**	0.070	**
Other households	0.045	**	0.050	**	0.063	**
Occupational status (ref: employee)						
Self-employed with employees	0.075	**	0.048	**	0.052	**
Own-account worker	0.054	**	0.037	**	0.041	**
Salaried and unpaid family workers	0.121	**	0.085	**	0.073	**
Number of cases	19,866		19,866		19,866	

**=significant at 1%-level,

*=5%, n.s.=not significant

Source: SILC 2007-2012, own calculations

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Poor farmers? No, we are not poor!

The qualitative fieldwork revealed that agricultural poverty has diverse causes: inappropriate calculations during farm succession, succession of a run-down farm business, animal diseases or crop pests, weather hazards or health problems of household members. Moreover, it showed that there is no typical poor farm household: a large and intensive dairy farm in the lowlands might be equally affected as an extensive suckler-cow mountain farm or a specialised perennial-crop farm in the hillsides. Hence, the paths into poverty and the mechanisms behind are very diverse.

Only few interviewees perceive themselves as poor, although all of them live or lived according to their narratives in very harsh financial situations we consider to be poverty.[12] It must be mentioned that only in 17 interviews did a discussion take place as to whether they perceive or have perceived themselves as poor. In 12 cases, the interviewees made clear that this had never occurred to them. One farmer's wife questioned whether poverty among farming families existed at all and concluded that poverty is impossible in Swiss agriculture:

> Well, poverty in agriculture cannot exist. Every farmer has land to keep animals and land to create a garden. But they must do something out of it. They must do what is needed or probably a bit more than that. We have animals, we do not have to buy meat. We can slaughter and eat the meat or eat produce from the garden. This is not poverty. Poverty, that is the poor, those having nothing to eat. In the city poverty exists. People without work, without flats. But in agriculture, poverty is impossible.

In five cases in which poverty was denied for their own situation, the interviewees somehow admitted that such situations do exist, as illustrated with the following quote of two farmers: *'I need to say it this way: money doesn't mean anything to me. You need it to pay a bill. But I have never felt poor in that sense.'* They perceive that they have everything they need: *'I have everything. I have a job; I have good health. I don't know, what is poor?'* They are neither rich nor poor but keen to say that they are well despite their harsh situation. One couple is undecided whether they are poor or not:

> Wife: Well, let's say, if you want...
>
> Husband: Oh no, I am not poor!
>
> Wife: No, you not but...
>
> Husband: But you neither!
>
> Wife: Me neither but look at today's world and politics and how people calculate. Generally seen, the income we have, we are among the poor, that's it. We are in this category of poor, but we don't consider ourselves to be poor. Well, that's it.

This discussion between the farmer and his wife displays an ambivalence between an 'objective' outsider view, the recognition that this fits their situation, and the 'subjective' feeling of not being poor. This moving back and forth between the outsider-label and the own perceptions has also been noted by Contzen (2015). A distancing

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from this label becomes obvious when respondents talk about their image of the poor:

> But generally, you have the feeling that they [the poor] are socially marginalised people, probably have been for generations, often foreigners. Well, you don't have the feeling of being part of this social class. (farmer's wife)

While in some cases the views of women and men are congruent, in two they are not: The women agree that they are poor while the men do not. In one of these cases, the wife only started talking about it as her husband, the farmer, briefly left the room:

> Poverty. This is bad. For me it is bad. I should mention that I was working before we had our first child. To be able to afford something. Just to buy something without having a guilty conscience. And poverty is always a bit… (thinking) where are you placed. What can you do? What are you allowed to do? Poverty is bad. Having no money. I don't need a lot of money, but I wish just to live a normal life.

Although she never admits it directly, indirectly she says that she perceives herself and her family as poor. This quote points to what all interviewees experience but in most cases is not named as poverty: that they lack money for essential things, have to forgo and wish to live a life free of sorrows. Such aspects of material deprivation are displayed in detail in the following section.

When important material goods and services are lacking

Given the specificities of farming income and the difficulties in measuring it, an alternative approach is needed, relying on factual living conditions, rather than on income. Yet, in this case, the phenomenon of adaptive preferences can be a problem (Crettaz and Suter 2013): individuals who have experienced long periods of low income may just have adapted to their situation by lowering their preferences and expectations. However, the EU's standard indicator of material deprivation may underestimate the extent of the problem because when respondents lack an item, they must indicate whether it is by choice or due to financial issues (called *enforced* lack).

Therefore, we have decided to focus on the fact of whether households possess certain items or not, instead of the *enforced* lack. This decision, however, raises other problems: to possess a car is a necessity for farmers, while this is far less the case for city dwellers. Being able to spend one week of holiday away from home might simply prove very difficult to organise for many farming families, whereas some may not be able to afford a holiday away from home, given the increased probability of living in a low-income household.

The best way to deal with these issues is to use a detailed table setting out the lack of various items/non-access to various services (Table 3). We have dropped the items 'telephone', 'washing machine' and 'colour TV' because the percentage of individuals lacking them was smaller than 1 per cent and the difference across categories is small.

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Table 3: *Lacking items and non-access to services by various socioeconomic groups. For each item, the two highest percentages are indicated in bold*

	% payment arrears	% can't manage unexpected CHF 2,500 expenditure	% no holiday	% no complete* meal every 2nd day	% no car	% not adequately warm	Number of cases
Self-employed farmers	5.20	8.90	**10.70**	0.70	0.70	1.30	338
Salaried and unpaid family workers in the family farming business	3.50	**18.30**	7.90	1.20	1.40	1.60	398
Subtotal 'family workers in agriculture'	**5.90**	**15.00**	**10.20**	**1.30**	1.50	**1.70**	*736*
Own-account workers in other sectors	**10.10**	15.20	8.20	**2.30**	**2.20**	**1.90**	872
Self-employed workers with 1–4 employees in other sectors	4.70	7.10	1.90	0.20	0.70	1.40	230
Salaried workers, non-tertiary degree, Swiss nationals	3.90	11.70	7.70	1.30	**2.00**	1.20	7,659
All workers (own-account worker, self-employed and salaried worker)	*10.6*	*17.8*	*7.4*	*2.4*	*2.1*	*2.3*	11,704

*meal including meat, poultry, fish or vegetarian equivalent.

Source: SILC 2007-2012, own calculations

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Self-employed farmers are overrepresented among those who do not go on holiday at all. Family workers in agriculture are particularly affected by the inability to manage an unexpected expenditure of CHF 2,500. The agricultural sector is slightly more likely to be in payment arrears than self-employed in other sectors and Swiss salaried workers, but much less than own-account workers in other sectors. The same is true for the lack of a complete meal every second day and not being able to keep one's home adequately warm, but the rates are so low (these problems are very marginal in Switzerland, quantitatively speaking) that the differences should not be over-interpreted. Finally, and interestingly, virtually all independent self-employed farmers own a car, but the difference with the rest of the population is very small.

Another factor worth considering is the volume of work. Farmers are known for working long hours. On average, those working in the agricultural sector (including non-family agricultural labourers) work 46.5 hours a week, while this number amounts to 37.3 hours in the other economic sectors. Therefore, we re-ran our regression models controlling for the volume of work. However, the above-presented results were hardly affected and conclusions regarding the risk of poverty and its link to agriculture remain the same (results not shown for the sake of conciseness).

Although the qualitative interviews did not explicitly cover all items of material deprivation, some of these items were brought up by the farming family themselves in several interviews. In general, they mentioned the following: not taking holiday, restrictions on food, payment arrears and inability to deal with unexpected expenses. To better understand material deprivation of farming families, we analysed the appearance of these items in our qualitative data. Only three families explicitly reported taking some days off, while in 19 cases the interviewees reported not taking holidays for financial reasons, compounded on dairy farms with the difficulty of finding a replacement.

> What we miss out… because of financial or other reasons… is taking holidays. I think, it would do us good to leave for two weeks a year. But this can be linked to severe costs. And this… we have never gone. (male farmer)

While it was not possible to find the exact item in SILC with respect to restrictions on food (see above), in eleven of the 32 interviews respondents mentioned that they must manage food expenditure very carefully and that self-sufficiency is one way of keeping costs low. The following quote illustrated impressively what material deprivation can signify for farming children and how parents try to reduce the impact on them:

> [The kids] didn't have the right to chocolate, they didn't have the right to lemonade, they didn't have the right to go to the cinema, they couldn't go to the swimming pool (…) We had always to calculate like this… we asked ourselves: 'but what could we do for them'? And we said 'oh well, let's bake once little *pain au chocolat*. So, she baked bread, with a small piece of chocolate inside. In the end, they enjoyed the little *pain au chocolat* more than ones bought in the grocery store. Because they had learned that we bake bread every day because it is too expensive… Bread is too expensive! When you have four kids and you start saying 'bread is too expensive', this means that there are troubles. (male farmer)

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The need to regularly defer the payment of bills as a strategy to deal with shortages in liquidity was mentioned in twelve interviews. And more than the other aspects of material deprivation it is perceived as psychologically stressful and a heavy burden, as the following quote shows:

> It is so annoying when bills arrive and you know for sure that you can't pay them for the next two months. Before, it was not like this. Then, bills arrived and you could pay them at the end of the month and that was it. It is very onerous when you just... then reminders arrive. You have to call there and explain the situation. This is just onerous. (male farmer)

The last item of material deprivation we found in the qualitative data is dealing with unexpected expenditure. Several interviewees reported unexpected expenditure which was not easy to pay, but only one interviewee mentioned a concrete figure, even being lower than the SILC item of 2,500 Swiss francs:

> [I would be fine] if I could say that at the end of the month some money is left, to have a cushion. Just a small one. When for example a fence needs to be repaired you could say [to the craftsmen]: 'yes, you can come and do it. I'll transfer the money.' The cushion would be gone but after some two or three months' work you would have one again of about 2,000 francs. Not that when something happens and a bill arrives you don't know how to pay it. You are always struggling and struggling. (female farmer)

The statistical analyses presented so far show that farming households are much more at risk of poverty (as defined by Eurostat) than similar groups of self-employed in other economic sectors because the former are strongly overrepresented at the bottom of the income distribution. In terms of living standards, they are only slightly worse off than non-agricultural self-employed, and better off than non-agricultural own-account workers. Still, farming households have longer working hours and – as the qualitative case studies confirmed – more often forego holidays for financial reasons. And both types of analysis show that farming households have limited room for manoeuvre when a financial problem occurs. We suppose that the high working hours and the limited possibilities to rest and gain distance during holidays limits the possibilities to develop appropriate strategies to deal with precarious situations, which is reinforced by the fact that individuals experiencing long-term poverty become present-biased and risk-adverse (see Haushofer and Fehr 2014; Carvalho *et al*. 2016). The following reasoning between a farmer's wife and her husband illustrates this constraint:

> Wife: We never got to an idea what else to do.
>
> Husband: You can imagine how busy we have been for some time. There was a long period I left the cowshed, we had supper and at eight or nine o clock it was over. Here it was dead [pointing to his head]. We had no more energy.

Another male farmer explained: 'Because it was work sleep'.

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Satisfaction with the financial situation and adaptive preferences

Despite the above-described harsh financial situations and material deprivation, the qualitative and quantitative analyses suggest that farming households are generally content. To assess this effect, we regressed the satisfaction with the household income (measured on a 1–10 scale) and deemed that those who gave a value of seven or more are satisfied, while the others are not. A logistic regression (Table 4) shows that farmers are 2.5 times more likely to be satisfied with their income than other self-employed workers with identical income and living conditions (the income level – in the form of the log income – and the number of missing items are controlled for, as well as gender, age and citizenship).

Satisfaction with the profession itself, with working in the nature and with animals as well as with working independently has repeatedly been shown by surveys done for the Federal Office of Agriculture (FOAG 2013, p. 62). While the last aspect – the independent work – is irrelevant as we compared farmers to other self-employed (see Table 4), the other aspects might partially explain the difference in satisfaction between farmers and other self-employed, as these are rewarding aspects of farmers' profession already well described by rural sociologists from around the world (e.g., Gasson and Errington 1993; Barclay *et al*. 2007). However, we suppose that these factors are not solely responsible for this difference. Based on the theoretical reasoning and previous studies' empirical results presented in section two, this difference must mainly be explained by adaptive preferences. Other disadvantaged self-employed workers can also adjust to their situation; however, given the very marked difference between farmers and other self-employed workers (see Table 4), this mechanism must be stronger in the agricultural sector. Alternatively, low-income spells might be shorter for non-agricultural workers. Yet no specific existing dataset allows us to assess this hypothesis, while SILC's 4-year rotating panel is obviously insufficient. However, our qualitative data allow us to identify adaptive preferences among farming families in difficult financial situations. Additionally, qualitative data are more appropriate to unravel subjective phenomena than quantitative data.

Table 4: *Odds of being satisfied with one's own financial situation among all self-employed workers, weighted, in per cent*

	Odds ratios
Works in agriculture	**2.5***
ln(disposable equivalised income)	2.14**
Number of missing items in the household	0.49**
Year of birth	0.08*
Squared year of birth	1*
Woman	1.12 n.s.
Swiss citizen	1.93**

** = significant at 1%-level,

* = 5%, n.s. = not significant.

Source: SILC 2007-2012, own calculations.

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Of the 32 interviews 21 revealed clear signs of adaptive preferences in three variations. The first represents a *socialisation of the phenomenon* and was very prominent in one interview. This variation mirrors farmers' ethic (Droz and Miéville-Ott 2001; Droz and Forney 2007; Crettaz and Forney 2010) and identity and can be illustrated with the following quote of a male farmer:

> Well, farmers don't need so much. They don't have time for holidays, hobbies, compared to others immense leisure time… they need a lot of money. But we have no time for that. We work seven days a week.

Accordingly, farmers as a societal group need less than other groups because of their 'way-of-being', or in the words of another interviewee, because farmers are modest and lack the time for spending money due to their hard-working job. In this context, some mentioned that this hard life is their choice:

> In agriculture, you live simpler, this is clear… whether you have chosen [to be in farming] and you do it, that's because you love it, because if you don't love it, you can't do it. (male farmer)

The second variation of adaptive preferences was present in most of the interviews and represents an *individualised form of the phenomenon*: interviewees interpret their situation based on their own experience rather than on the whole farming population and its ethic. The following quote represents this well:

> Interviewer: Did you ever feel poor in this time of financial constraints?
>
> Wife: No, not poor. We have always had food. No, not poor. Not spoiled (laughing). We are realistic.
>
> Farmer: I have always said: We have work, we have food, we have a good roof over our heads. This way, we can live.
>
> Wife: Well, I don't know it differently. That's why I say, now it's like this and it is all right.

This farmer's wife explains, like other interviewees, that she has never been used to another standard of living, only to one characterised by harsh material deprivation and modesty. Because she has never known it differently, it does not feel like poverty, it feels normal. Interestingly, in this variation of the phenomenon, the situation is perceived as good because they have work, food and a roof over their heads, hence the basic human needs are satisfied. This narrative is surprising in a wealthy country, but present in several interviews and it often emerged paired with a love of their profession, as another male farmer said:

> But, we have a roof over our heads, we eat every day, we gain our lives, we have a job we like, me, I have the chance to carry out a passion.

The last variation of the phenomenon of adaptive preferences alludes to an imbalance between the objective and subjective dimensions of quality of life (e.g., Zapf 1984). This variation of the phenomenon is prominently present in one case. While

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the interviewees repeatedly mention different aspects of material deprivation, their discourse was replete with statements on their satisfaction with their life: a chosen alternative life characterised by a good marital relationship, a beloved work in nature, own healthy food and (financially unavoidable) material renouncement. The following quote between a farming couple illustrates this well:

> Husband: (...) we don't feel lacking something, do we (towards his wife)? At least, I do not.
>
> Wife: No, me neither (laughing).
>
> Husband: It depends on someone's expectations. We indeed have high expectations but probably somewhere else (...) I think, for us it is important to have a good relationship. (...) And for us, it is important that the things we do, we do right. (...)
>
> Wife: In the sense that it is satisfying. So that we don't need any compensation, not switching off our heads in front of the TV. That our life is enough... enjoying our life... that working and being is a pleasure.

In contrast to Bourdieu's (1979) elaboration on the phenomenon of adapted preferences, this couple clearly lacked economic resources, but not cultural or social ones. Probably, they had chosen this lifestyle of farming being very conscious of the financial hardship linked to it.

Discussion and conclusions

Although Swiss farm structures are rather small-scale, leading to rather low productivity compared to other European countries' agriculture, this research sheds light on fuzzy discussions and political 'puzzles' about poverty among farming families that can be generalised beyond the Swiss case. It shows that poverty among Swiss famers exists at a similar level as among own-account workers in other economic sectors, a group known for its high levels of poverty, and that one-quarter of Swiss farmers have an income below the EU's poverty line. While these results are not surprising, this research provides original findings based on regression models: working in agriculture implies, *all else being equal*, a higher risk of being poor when the relative poverty line is set at 60 per cent or even at 50 per cent of median income. This is similar to Herman's (2016) result showing that for the EU working poverty is positively linked with working in agriculture as self-employed, salaried or unpaid family workers.

However, turning back to Switzerland, when the official absolute poverty line is used, which is much lower than the EU line and accounts for regional variations in price levels, working in agriculture *as such* is no longer a factor predicting poverty. In this case, the socio-demographic characteristics of these very low-income households, such as the high percentage of own-account workers (about two-thirds of farmers do not have salaried employees) and the mostly low to intermediate educational level are the main factors leading to this problem. Hence, poverty estimations based on disposable income only can be problematic when analysing the situation of specific population subgroups whose cost of living and/or structure of expenditure deviate from the national norm. To deal with this challenge, we additionally produced

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poverty rates among farmers using the country-specific poverty line adapted to the specificities of farmers, i.e., considering the lower housing and living costs of this population group. However, is it correct to assume that it is mainly farming households which have lower costs or do other small family-owned businesses in rural areas have similar expenditure structures, implying a need to adapt the poverty line? This is an important path for further poverty studies.

To circumvent the challenge of accounting for living costs and spending patterns, as well as the general problem of measuring farming households' income (and income from self-employment in general), it is advisable to focus on non-income indicators. For this reason, we used indicators of material deprivation showing that the main differences between self-employed farmers and family workers and 'comparable' workers in other sectors pertain to the fact of not going on holiday and the inability to manage an unexpected expenditure of CHF 2,500.

Our reflections on adaptation mechanisms owe much to the mixed-method design used, which was beneficial in understanding mechanisms that are difficult to explain with statistical models only. These models, however, allowed us to assess the extent of this phenomenon: farmers are, *all else being equal*, 2.5 times more likely to be satisfied with their income than other self-employed workers who have the same financial and material situation. These findings, the ambivalences articulated in the narrations of our respondents and their perception of not being poor are rather novel and surprising. It is the ambivalence between the 'psychic income' (Gasson and Errington 1993, p. 228) gained from or the love for their profession – leading to life satisfaction or adaptation processes – and the objective financial and material conditions leading to mental and physical stress that might partly explain these findings. The interviews also clearly show that adaptive preferences are at stake, in the form of individual adaptive capacities as well as in the socialised form of farmers' ethic and identity.

Central characteristics of farming, such as the above-mentioned ethic and identity as well as the primate of farm continuity are not specific to Swiss farmers. Therefore, it is likely that farmers in other advanced economies experience similar ambivalences between their financial situation and job satisfaction and likewise adapt their preferences. These adaptation mechanisms make farming families resilient in situations of poverty and material deprivation, even for a very long time. However, this might negatively impact the psychic and physic conditions of the farming household's members as the qualitative case studies revealed for Switzerland (also Fluder et al. 2009). This in turn can result in other (financial) consequences impacting the wellbeing of the family and prosperity of the farm. Furthermore, farming families might start to live off the substance of their businesses, hence destroying their livelihood in the long run.

What are the policy implications of these findings? The self-definition of our interviewees of not being poor and the mechanisms of adaptive preferences seem to confirm the suggestions of previous studies pointing to a high share of non-take-up of social benefits by farming families (Wicki and Pfister-Sieber 2000; Mann 2005; Contzen 2015; Hümbelin 2016). Hence, social policy in the form of social assistance as it is in today's Switzerland (which is comparable to most European countries'

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means-tested benefits) does not work in the case of farmers' poverty. Moreover, due to the complexity of calculating farmers' eligibility for social assistance, social workers might be overstretched, which could further discourage farmers from claiming social assistance. On the other hand, agricultural policy with the instrument of direct payments is not meant to be a social policy to eradicate poverty among farmers. Instead of proposing to totally withdraw direct payments over the long run and in the meantime using them as a social policy instrument for current poor farmers only, as Mann (2005) does in his analysis, we recommend promoting agricultural dropout by offering incentives for retraining. However, the existing programmes have failed, i.e. only a handful Swiss farmers have made use of them. Hindering factors are, on the one hand, the above-mentioned aspects of farm continuity, the psychic income of farming and the risk-aversion and present-bias of disadvantaged persons. On the other hand, agricultural policy and laws compound such hindering factors by supporting farm continuity within the family,[13] thus reproducing the tendency of farmers to remain in agriculture (Contzen et al. 2017). Thus, agricultural policy would need to assist farm continuity within or outside the family not following a 'scattergun approach' but based on certain criteria such as the viability of a farm.

Following these considerations, it would be interesting to investigate what alternatives or opportunities exist for former farmers on the (regional) labour market. It would also be important to scrutinise in more depth the factors hindering farming families to give up their business and start anew outside agriculture. To analyse these issues, it would be crucial not only to focus on farming families but on similar groups of own-account workers or self-employed with few employees too. Which factors and mechanisms are at play when bakers, shoemakers or carpenters give up their businesses despite it being their heritage from their great-grandparents? And how is poverty among these self-employed perceived and coped with? What similarities and differences exist between them and farmers? Possibly, when analysing such individuals working and living in rural areas, the push factors or stigmas are similar.

In this regard, at least concerning quantitative analyses, this study represents a novelty: most Swiss studies about farmers compare the farming population with the non-farming population in general (e.g., Reissig 2017), with the non-farming population living in both urban agglomerations and rural areas (e.g., FOAG 2013, 2017) or with the non-farming population similar in age, sex and region (e.g., FOAG 2003, 2010). These studies disregard that farmers as self-employed with no or few paid employees might live in a totally different situation than employees. This dichotomisation between agriculture and non-agriculture without considering employment status is problematic. Hence, this study used a different approach for the statistical analysis: it compared self-employed farmers with self-employed with no or few employees. Although probably lacking the specificities of working and living in a rural area, this comparison group is assumed to share many more similarities with farmers than any (rural) employee. In using this approach, our study proposes new paths in studying the situation of farming families which might be important not only in the context of Swiss studies but also for studies on farming families in other advanced economies.

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Notes

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[1] From a sociology-of-family perspective, it would be more appropriate to talk of farming households rather than farming families, as not all farming households represent a family in the proper sense of the term. However, as most farming businesses are family farms, we use the term farming families.

[2] Similar numbers on farming families were found in the late 1990s and early 2000s for the Netherlands (23 per cent; Van Everdingen et al. 1999, quoted in Meert et al. 2005), Belgium (31 per cent; Van Hecke 2001) and Austria (31 per cent; Wiesinger 2005).

[3] In addition to these studies, some BSc and MSc theses on poverty in farming families have shown their strategies including the (non-)take-up of social benefits.

[4] This is an appropriate comparison group, as most of the self-employed farmers are Swiss citizens and few of them have gone beyond upper-secondary education.

[5] Some farms are too small to be officially recognised as farming businesses, making them ineligible for direct payments, and therefore do not appear in official statistics on agriculture.

[6] Together with specialists on agricultural accounting, we defined several income thresholds for farming households composed of one to four and more individuals.

[7] The quotes used in this paper were translated by the authors from German, French or Italian into English.

[8] For information on the apprenticeship system in Switzerland, see SERI 2017.

[9] The 26 cantons of Switzerland can be described as member or federal states forming the Swiss Confederation.

[10] CHF (Swiss francs) 2,500 correspond to € 2,186 or US$ 2,540 as at late August 2018.

[11] The authors have written an ad hoc syntax to calculate this indicator, based on the technical indications provided by the Swiss federal statistical office.

[12] For the households interviewed, it is not sure whether they would 'officially' count as poor.

[13] Farm successors can claim interest-free financial start-up aid based practically only on the criteria of not being older than 36 years. And the Federal Act on Rural Land Rights allows own-family successors to purchase the agricultural business based on the capitalised value and not the market value.

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